

Florida Department of Health
Health Care-Associated Infection Prevention
Program

**Strategic Plan to
Prevent Health Care-
Associated Infections
and Antimicrobial
Resistance**

2019–2024



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Acronyms and Abbreviations

AR	antimicrobial resistance
ARLN	Antimicrobial Resistance Laboratory Network
ASB	asymptomatic bacteriuria
ASP	antimicrobial stewardship program
AU	antimicrobial use
AUR	antimicrobial use and resistance
BPHL	Bureau of Public Health Laboratories
CAUTI	catheter-associated urinary tract infection
CDC	Centers for Disease Control and Prevention
CDI	<i>Clostridioides difficile</i> infection
CephR	extended-spectrum cephalosporin-resistant
CHD	county health department
CLABSI	central line-associated bloodstream infection
CPO	carbapenemase-producing organism
CR	carbapenem-resistant
CRE	carbapenem-resistant Enterobacteriaceae
DUA	data use agreement
ELC	Epidemiology and Laboratory Capacity
ELR	electronic laboratory reporting
HAI	health care-associated infection
HHS	U.S. Department of Health and Human Services
ICAR	infection control and assessment response
KPC	<i>Klebsiella pneumoniae</i> carbapenemase
MDR	multidrug-resistant
MDRO	multidrug-resistant organism
MRSA	methicillin-resistant <i>Staphylococcus aureus</i>
NHSN	National Healthcare Safety Network
POC	point of contact
SIR	standardized infection ratio
SOP	standard operating procedure
SSI	surgical site infection
TAP	targeted assessment for prevention
VAE	ventilator-associated event
VRE	vancomycin-resistant <i>Enterococcus faecium</i>

Executive Summary

Florida has the largest proportion of persons aged 65 years and older in the nation, making up 18.7% of the residential population. A large system of health care facilities has been developed to support its resident population. Additionally, there were over 120 million domestic and international visitors to Florida in 2016, including those coming through Florida's 14 international airports, with the largest volume coming through Miami and Orlando. There are 315 licensed inpatient hospitals with 213 having emergency departments. There are 439 ambulatory surgery centers, 683 nursing homes, and 3,106 licensed assisted living facilities in Florida.*

Maintaining and building relationships with health care facilities is critical for public health in Florida on multiple fronts:

- Preventing HAIs
- Investigating and responding to HAI outbreaks
- Infection control assessments and responses
- Providing state-level surveillance capacity

In response to the increasing concerns about the public health impact of HAIs, HHS developed an action plan to help prevent these infections. The HHS Action Plan includes recommendations for surveillance, research, communication, and metrics measuring progress toward national goals.

Three overarching priorities have been identified:

- 1) Establishing five-year national prevention targets (e.g., 50–70% reduction in bloodstream infections)
- 2) Improving the use of quality metrics and supporting surveillance systems to meet targets
- 3) Prioritizing and implementing current, evidence-based prevention recommendations

HAI Program Background

The Florida Department of Health (FDOH) HAI Prevention Program was established in 2010 through the CDC ELC cooperative agreement. Program strategic priorities included:

- Establishing an HAI prevention program infrastructure.
- Conducting HAI and AR surveillance.
- Engaging in prevention activities with internal and external partners (e.g., supporting CHD investigations, responding to outbreaks, and promoting infection control best practices and judicious use of antibiotics).

The FDOH HAI Prevention Program is overseen by the health executive medical director and consists of the program manager, two epidemiologists, an infection preventionist, an AR coordinator, a data specialist, and an

Florida serves a diverse population through numerous health care settings.

18.2%

Age 65+



120 million visitors

3,106 licensed assisted living facilities

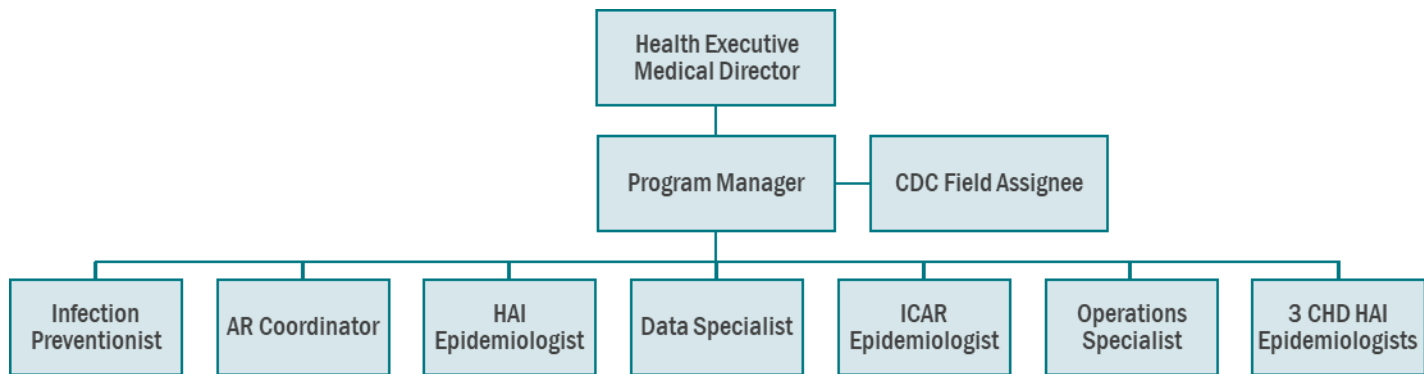
683 nursing homes

439 ambulatory surgery centers

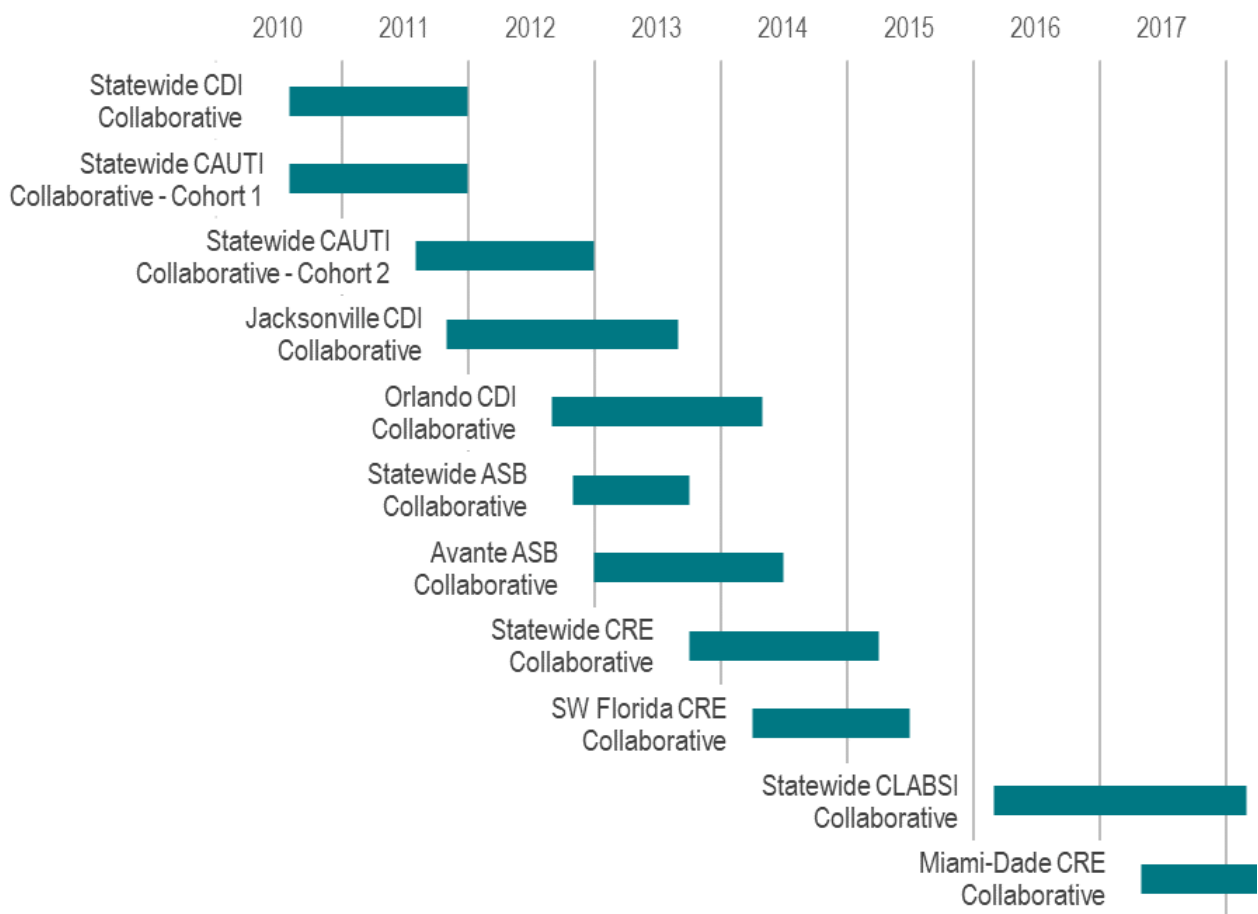
315 inpatient hospitals, 213 with emergency departments

*Source: Florida Hospital Association, 2015; Association for Health Care Administration, 2015

operations specialist. In 2018, FDOH received additional subject matter expertise and field support through the CDC by adding a field medical officer to the HAI Prevention Program. The HAI Prevention Program also supports three CHD HAI epidemiologists and five CHD ICAR epidemiologists.



Since its installation, the HAI Prevention Program has facilitated several statewide and regional collaboratives, working in conjunction with local, state, and federal health care partners to promote effective infection control practices.



HAIs, including infections from antimicrobial-resistant organisms, cause significant harm to patients, are costly, and are largely preventable. CDC formally identified eliminating HAIs as a “winnable battle” because HAIs are a national health priority with proven and effective strategies for prevention. FDOH collaboratives have led to a 3.4% decrease in CDI incidence and a 23% decrease in CAUTIs. Building upon these successes is crucial for the continued progress toward the elimination of HAIs and antimicrobial-resistant organisms.





In addition to providing education, training, and networking opportunities, FDOH conducts thorough site assessments at each facility participating in a collaborative to assess infection prevention policies and identify areas for improvement. In 2015, CDC created the ICAR assessment, which was designed to evaluate a facility’s capability to identify, inform, isolate, prepare for transport, and provide care for persons with highly infectious diseases, such as Ebola. The HAI Prevention Program adopted this assessment and created a standardized ICAR process that continues to be used by collaboratives and during outbreak investigations. In 2017, the HAI Prevention Program conducted 34 ICARs, four of which were conducted as part of a collaborative and 10 of which were conducted in response to outbreak investigations.

Mission and Vision

- Mission** To promote the prevention and control of health care-associated and antimicrobial-resistant organism infections using surveillance methods, evidence-based prevention, and control strategies through the collaboration of public and private health agencies.
- Vision** To reduce HAIs within Florida’s health care system.
- Goal** To respond effectively to control HAI outbreaks and prevent HAIs among FDOH care facilities.

Priority Areas

Four priority areas are identified:

			
Infection Prevention Standards and Practices	Surveillance and Outbreak Response to HAIs	Antimicrobial Stewardship	Surveillance and Outbreak Response to MDROs and <i>C. difficile</i>
Goal: Provide education, resources, and engagement with stakeholders across the continuum of health care	Goal: Improve detection, investigation, response, and control measures for HAI outbreaks	Goal: Improve antimicrobial prescribing practices; slow antimicrobial resistance across the continuum of care	Goal: Improve detection, investigation, response, and control measures for outbreaks of MDROs and <i>C. difficile</i>

Funding

The HAI Prevention Program is currently funded through the ELC Cooperative Agreement. The goal of this agreement is to prevent and control the spread of infectious disease threats by increasing health department capacity. The current ELC funding cycle is in its final year of a five-year cycle (August 1, 2018–July 31, 2019). The CDC is currently preparing for the launch of a new five-year ELC cooperative agreement, which is set to begin on August 1, 2019 and run through July 31, 2024. The activities set forth in this plan are contingent upon continued program funding.

Key Strategies








Cross-cutting topics were identified as key strategies throughout the plan.

- Education & Training** Develop and evaluate health care professional and FDOH education and training essential for a competent work force that adopts best practices to prevent HAIs and AR. Education for policy makers, administrators, and community members will increase awareness, support, and investment in efforts to prevent HAIs and AR.
- Policy Development** Establish FDOH policies with clear standards for acceptable practices. Policies can be used to focus resources on priority areas. Examples include using policies about infection control training as a strategy to achieve the goal of having a competent workforce; policies for HAI and AR reporting help to obtain the data necessary to inform action.
- Data & Surveillance** Coordinate surveillance to provide data that will be used to measure, inform, and guide improvement efforts.
- Communication** Communicate information effectively to spread best practices for the prevention of HAIs and AR. Improving communication across the continuum of care, particularly when patients transition between health care facilities or providers, will facilitate more timely interventions and prevention of HAIs.

Summary of HAI/AR Trends in Florida

The National and State HAI Progress Report, compiled by the CDC, provides SIRs of selected HAIs compared to the HHS Action Plan SIR goals. These data are used to track progress and target interventions to reduce the incidence of HAIs.

The following acute-care facility summary data were used to guide action planning:

Metric	FL SIR			Trend 2015–2017	% Change 2017 FL vs. 2015 FL	% Difference 2017 FL vs. National Baseline	HHS Proposed Reduction	Target Met?
	2015	2016	2017*					
CAUTI	0.89	0.82	0.74		17% ↓	26% ↓	25%	✓
CDI	0.94	0.81	0.68		28% ↓	32% ↓	30%	✓
CLABSI	1.10	0.91	0.81		26% ↓	19% ↓	50%	✗
MRSA	1.25	1.12	1.03		17% ↓	3% ↑	50%	✗
SSI – Abdominal hysterectomy	0.94	0.91	0.89		5% ↓	11% ↓	30%	✗
SSI – Colon	1.00	0.81	0.84		16% ↓	16% ↓	30%	✗
VAE	1.00	0.82	0.84		16% ↓	16% ↓		

2017 HAI Data Summary

CAUTI

For all locations (critical care locations, wards) combined, Florida observed 1,639 CAUTIs. Infections predicted were 2,228.97 with an SIR of 0.74 (95% CI 0.700, 0.772). This translates to a 26% reduction compared to the national referent period, a 17% reduction compared to the 2015 FL SIR and a 11% reduction compared to the 2016 FL SIR. The reduction in CAUTIs were statistically significant.

CDI

Facility-wide, Florida observed 5,488 hospital-onset CDIs. Infections predicted were 8,114.94 with an SIR of 0.68 (95% CI 0.659, 0.694). This translates to a 32% reduction compared to the national referent period, a 28% reduction compared to the 2015 FL SIR and a 16% reduction compared to the 2016 FL SIR. The reduction in CDIs were statistically significant.

CLABSI

For all locations (critical-care locations, wards, neonatal intensive-care units) combined, Florida observed 1,633 CLABSIs. Infections predicted were 2008.47 with an SIR of 0.81 (95% CI 0.774, 0.853). This translates to a 19% reduction compared to the national referent period, a 26% reduction compared to the 2015 FL SIR and a 10% reduction compared to the 2016 FL SIR. The reduction in CLABSIs were statistically significant.

MRSA

Facility-wide, Florida observed 755 hospital-onset MRSA bacteremia infections. Infections predicted were 729.95 with an SIR of 1.03 (95% CI 0.962, 1.110). The 2017 FL SIR was 3% higher compared to the national referent period; however, there was a statistically significant reduction of 17% compared to the 2015 FL SIR. The 8% reduction in 2017 FL SIR from 2016 FL SIR was not statistically significant.

SSI – Abdominal hysterectomy

Florida observed 109 SSIs following abdominal hysterectomy surgery in adults ≥ 18 years of age. Infections predicted were 122.62 with a SIR of 0.89 (95% CI 0.733, 1.068). This translates to a 11% reduction compared to the national referent period, a 5% reduction compared to the 2015 FL SIR and a 3% reduction compared to the 2016 FL SIR. However, the reductions were not statistically significant.

SSI – Colon

Florida observed 496 SSIs following colon surgery in adults ≥ 18 years of age. Infections predicted were 588.72 with an SIR of 0.84 (95% CI 0.771, 0.919). This translates to a 16% reduction compared to the national referent period and a 16% reduction compared to the 2015 FL SIR. The reductions were statistically significant. The 4% increase in 2017 FL SIR from 2016 FL SIR was not statistically significant.

VAE

For all locations (critical-care locations, wards) combined, Florida observed 1,653 VAEs. Infections predicted were 1964.29 with an SIR of 0.84 (95% CI 0.802, 0.883). This translates to a 16% reduction compared to the national referent period and a 16% reduction compared to the 2015 FL SIR. The reduction in VAEs were statistically significant. The 3% increase in 2017 FL SIR from 2016 FL SIR was not statistically significant.

2017 AR Data Summary

Along with HAI summary data, AR data for seven bug-drug profiles (i.e., pathogen-antibiotic combinations that are used to describe the bacteria's resistance to specific drugs) is collected after a CLABSI, CAUTI, or SSI occurs. These profiles include:

- CephR *Klebsiella* species
- CR *Escherichia coli*
- CR *Enterobacter* species
- CR *Klebsiella* species
- MDR *Acinetobacter* species
- MRSA and
- VRE

The following acute-care facility summary data were used to guide action planning:

	% Resistant		% Change 2017 vs. 2014
	2014*	2017	
CephR <i>Klebsiella</i>	19.46	26.46	36 ↑
CR <i>E. coli</i>	1.00	1.56	60 ↑
CR <i>Enterobacter</i>	4.76	7.37	54 ↑
CR <i>Klebsiella</i>	4.60	5.93	28 ↑
MDR <i>Acinetobacter</i>	46.38	26.32	43 ↓
MRSA	58.96	49.73	16 ↓
VRE	71.71	64.43	10 ↓

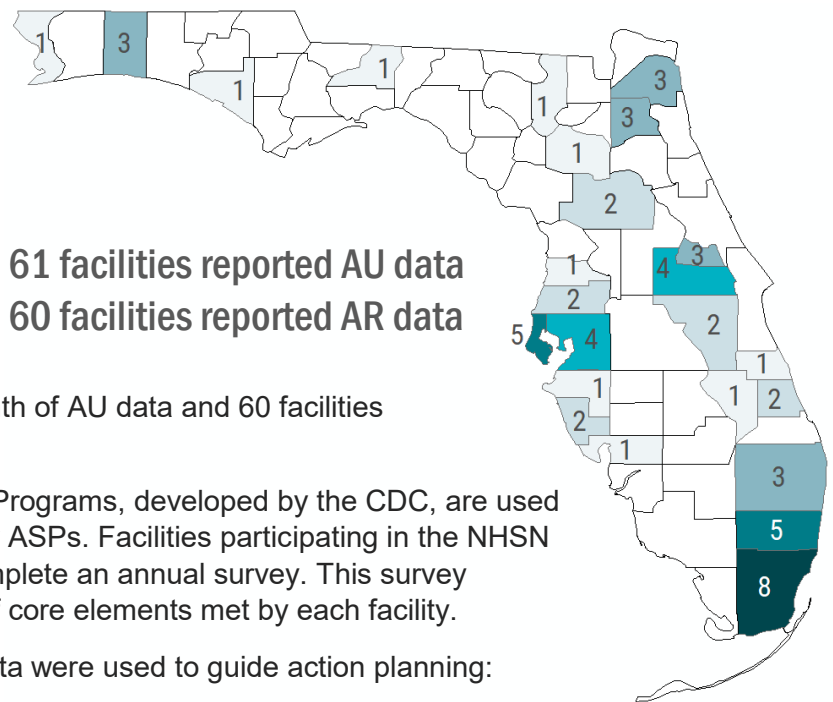
*2015 and 2016 data not available online or through the Florida data use agreement

Another source of AR data is the NHSN AUR module. This module provides a mechanism for facilities to report and analyze AU as a part of antimicrobial stewardship efforts, to evaluate AR data using a standardized approach, to aid in clinical decision making related to AR issues, and to prioritize transmission prevention efforts.

In 2017, 61 facilities reported at least one month of AU data and 60 facilities reported at least one month of AR data.

The Core Elements of Antibiotic Stewardship Programs, developed by the CDC, are used to assess the robustness of health care facility ASPs. Facilities participating in the NHSN Patient Safety Component are required to complete an annual survey. This survey contains questions that quantify the number of core elements met by each facility.

The following acute-care hospital summary data were used to guide action planning:



Action Plan

The following sections outline the key priorities, goals, objectives, strategies, and performance measures to guide HAI/AR prevention efforts in Florida over the next five years. Performance measures will be analyzed on a continual basis to monitor progress with each priority area. The FDOH HAI Prevention Program will lead implementation of this plan in partnership with the HAI/AR Prevention Advisory Board.

Priority A. Infection Prevention Infrastructure, Standards, and Practices

Goal #1: Provide resources and engage with stakeholders across the continuum of health care.

Objectives

Objective 1.1
Provide leadership, coordination, and collaboration between public health and all health care delivery settings.

Strategies

- 1.1.1 Engage statewide HAI prevention leadership through a multidisciplinary HAI advisory board.
- 1.1.2 Establish regional and CHD HAI POC to improve communication between the state and counties. The state will:
 - 1.1.2.a Provide training and education on HAIs and MDROs.
 - 1.1.2.b Establish an inventory list of HAI contacts at both CHDs and health care facilities.
 - 1.1.2.c Coordinate laboratory testing, ICARs and other state-level activities with HAI POC assistance to provide arrangement of lab analyses, data sharing, records collection, ICAR scheduling, outbreak response, and consultations.
- 1.1.3 Establish relationships with CHDs for HAI program support and maintain executive-level relationships with federal, state, and professional organizations.
- 1.1.4 Improve effective HAI communication within and between facilities. The state will:
 - 1.1.4.a Examine barriers to inter-facility communication, including the root causes for why facilities may be reluctant to admit patients due to their infection or colonization status.

Performance Measures

- Track the number of meetings/communications with HAI/AR Prevention Advisory Board.
- Create communication plan for sharing with CHDs by November 2019.
- Email communication plan to CHDs by December 2019.
- Distribute annual communication and HAI/AR capacity needs assessment to identify areas for improvement by August 2019 with a response goal of 60%.
- Reach a goal of 60% or greater CHD HAI contact attending annual training on HAIs and MDROs.
- Biannual update of CHD HAI contact list.
- Distribute annual needs assessment evaluating barriers to performance timely inter-facility communication by January 2020 with a response rate of 40% from

Objective 1.2
Develop a health care workforce that is educated and qualified in supporting effective infection control programs.

- 1.1.4.b Establish an inter-agency workgroup to plan and develop guidance for inter-facility communication.
- 1.1.4.c Develop and distribute standardized reporting criteria for communication during inter- and intra-facility patient transfers, including patient HAI/AR history and antimicrobial usage.
- 1.1.4.d Provide solutions and assistance to mitigate identified barriers.
- 1.1.4.e Develop and expand ways to automate inter-facility communication of minimum elements of HAI/AR information during patient transfers. Develop and expand ways to automate inter-facility communication of minimum elements of HAI/AR information during patient transfers.
- 1.1.5 Develop and implement a communication plan to provide updates on state HAI program activities and processes to meet public and private stakeholder needs.
 - 1.1.5.a. Increase HAI awareness in the community through improved Web page content and social media account messages.

- 1.2.1 Establish relationships with state academic partners to assist with the development of HAI prevention initiatives and competency-based training programs for health care settings and future health care professionals.
 - 1.2.1.a Explore policy options for implementation to mandate minimum training for personnel charged with overseeing prevention and control into standards of practice.
 - 1.2.1.b Consider establishing requirements for education and training of health care professionals in HAI prevention (e.g., certification requirements, public education campaigns, and targeted provider education) or work with health care partners to establish best practices for training and certification.

- each facility type (i.e., IPs in ACHs, LTACHs, and LTCFs).
- Summarize results and share with inter-agency workgroup by March 2020.
- Develop recommendations on minimum elements of HAI/AR information to communicate during patient transfers to health care facilities by October 2020.
- Disseminate recommendations on minimum elements of HAI/AR information to communicate during patient transfers to health care facilities by January 2021.
- Annually publish MDRO activity report on EPICOM.
- Annually update inventory of health care settings and facilities that includes a point of contact for infection prevention and control (or method for reaching that individual).
- Provide quarterly HAI/AR data reports to stakeholders.
- Quarterly evaluate web page content to ensure HAI/AR education and resources are current.
- Develop infection prevention competency-based training module expanding into dialysis and emergency services by January 2020.
- Create policy for minimum training standards required for personnel in charge of facility infection prevention and control programs by March 2024.

Objective 1.3
Collect, analyze, interpret,
and report HAI/AR
surveillance data to direct
infection prevention activities.

1.2.2 Conduct ICARs to identify and analyze strengths and weaknesses within health care facilities.

1.2.2.a Develop resources for the implementation of interventions to address priority areas for improvement.

1.2.2.b Assess trends in HAIs to determine effectiveness of implemented interventions.

1.2.3 Provide resources through collaboratives for facilities to participate in quality improvement activities and to incorporate current guidelines and recommendations for infection prevention and control into standards of practice.

1.3.1 Develop and maintain SOPs for ICAR, TAP strategy, ASPs, and the Merlin (Florida's existing surveillance system) HAI outbreak module.

1.3.1.a Provide education and training on the use of SOPs to HAI field staff and CHDs.

1.3.2 Conduct annual review of the state HAI Prevention Plan to evaluate progress toward achieving goals set forth in the plan.

- Track the number/type of facilities that receive on-site assessments and gap analyses annually.
- Track the number/type of resources developed annually.
- Conduct follow-up ICAR assessments on 6-months following initial ICAR.
- Conduct data analysis pre- and post-on-site assessment visits to include improvement in hand hygiene and personal protective equipment compliance rates, number of observations, HAI rates, number of audits, and compliance with cleaning and disinfection practices with a goal of a minimum of 20% improvement upon follow up.
- Report the number and type of resources and collaboratives provided to facilities quarterly and share with HAI Advisory Board.

- Develop SOPs for ICAR by August 2019.
- Develop TAP strategy SOPs by August 2019.
- Develop Merlin SOP by August 2019.
- Track the number of counties who participate in SOP trainings with goal attendance rate of 60%.
- Summarize progress toward achieving goals prepared every 6 months and shared with the HAI Advisory Board.

Priority B. Surveillance, Outbreak, and Response to HAIs

Goal #2: Improve detection, knowledge, investigation, and response to HAI outbreaks and AR organism outbreaks.

Objectives

Objective 2.1
Develop surveillance activities to improve outbreak detection and to ensure a timely and appropriate response is provided.

Strategies

- 2.1.1 Establish an HAI/AR module within Merlin to monitor and detect HAI/AR outbreaks.
 - 2.1.1.a Educate CHDs on the use and entry of HAI/AR events into the surveillance module.
- 2.1.2 Develop guidelines and definitions to improve the detection and reporting of HAI outbreaks to CHDs.

Performance Measures

- Create HAI module for reporting of HAI/AR events by August 2019.
- Track the number of HAI/AR outbreaks in jurisdiction by organism, facility type, HAI category quarterly in HAI Advisory Board Report.
- 60% of CHDs that complete annual survey and training on the HAI module by September 2019.
- Create HAI Guidance for Surveillance and Investigation for CHDs to conduct outbreak response by August 2019.

Objective 2.2
Strengthen knowledge and response to HAIs, AR, and AU occurring across the continuum of care.

- 2.2.1 Enact and maintain a DUA with the NHSN and participating health care facilities for access to HAI events and AR/AU data.
- 2.2.2 Ensure information included in the DUA is complete for appropriate analysis and action planning for targeted populations (i.e., patient-level identifiers).
- 2.2.3 Extend the DUA to additional settings by incorporating long-term care and outpatient care facilities (outpatient care component).
- 2.2.4 Enhance the quality of reporting into NHSN by conducting data validation and quality checks on identified HAI metrics.

- Renew and expand DUA to cover essential HAI data, demographic information, and health care settings for thorough analysis to drive quality improvement strategies by 2022.
- Evaluate current DUA and needs assessment to meet quality objectives by 2022.
- Gain access to and analyze existing data sources that are not currently available to the HAI program (ambulatory surgery, long-term care) by 2022.
- Complete external data validation on a minimum of five facilities annually. Priority will be based on quality of data by using quarterly data.

Objective 2.3
Prepare for emerging infectious disease threats that may enter health care facilities.

- 2.3.1 Collaborate and coordinate with state and local HAI/AR prevention programs, coalitions, communicable disease programs, and emergency preparedness programs to prepare regional response plans for emerging threats and novel pathogens.
- 2.3.2 Administer CDC standardized outbreak assessment tools to determine facilities' capabilities for detection, reporting, and response to infectious disease outbreaks and emerging threats.

- Annually review regional- and facility-specific response plans (as feasible) for special infectious disease threats.
- When feasible, perform facility readiness assessments (ICAR) as a coordinated team effort across programs.
- Provide summary of gaps for improved understanding of gaps for guidance of recommendations/training/education within 30 days of assessment.

Objective 2.4
Increase knowledge and competency of relevant health care personnel related to outbreak preparedness, detection, containment, and resolution.

- 2.4.1 Educate and train relevant staff in health care facilities across the continuum of care on outbreak preparedness and response for emerging and urgent infectious diseases (e.g., use the CDC Outbreak Investigation Toolkit as a resource).
- 2.4.1.a Conduct a needs assessment to determine gaps in knowledge for the development of targeted training education modules.
- 2.4.2 Establish protocols for exchanging information about outbreaks or breaches among state and local government partners (e.g., state survey agencies, licensing boards, infectious diseases authorities).

- Conduct annual education to CHDs and health care facilities on HAI/AR outbreak preparedness and response through incorporation of content on detection, investigation, and response to infectious disease outbreaks.
- Hold regional multidisciplinary meetings to review gaps and foster improved communication about HAIs and AR within cross-continuum clusters of health care facilities and local health departments through a minimum of 3 drills annually.
- Provide number of meetings, participants, roles, resources created, meeting minutes to HAI advisory board quarterly.
- Conduct evaluation of needs assessment for continued planning by January 2020.
- Develop preparedness plan defining processes and tiered response criteria to handle serious infection control breaches (e.g., syringe reuse), suspect cases/clusters, and outbreaks by November 2020.

Objective 2.5

Use available data sources to drive action and response efforts for the prevention of HAIs and AR organisms.

2.5.1 Identify specific HAI prevention targets consistent with the HHS priorities, to include MRSA, CLABSI, abdominal hysterectomy SSI, and colon SSI occurring within FDOH care facilities.

2.5.2 Establish an infection prevention working group under the state HAI advisory board to coordinate HAI collaboratives.

2.5.3 Implement new reporting mechanisms and/or requirements where data are insufficient to guide efforts.

- Identify the number of facilities with high infection rates using TAP reports to recruit a minimum of 50% for collaboration.
- Annually report the proportion of those facilities for which TAP Facility Assessments were conducted.
- Annually report the proportion of those facilities for which FDOH provided a completed TAP Feedback Report summarizing TAP Facility Assessment results and identifying potential gaps in infection prevention efforts.
- Annually report the proportion of those facilities for which evidence-based infection prevention methods were implemented to address gaps, with a minimum of 80% of recommendations be implemented.
- Annually report the proportion of those facilities who demonstrated reduction in infection rates following the intervention(s).
- Track the number of meetings and progress from meetings toward meeting set objectives.
- Quarterly report progress to the HAI Advisory Board.
- Evaluate policy options for reporting novel and emerging drug resistance organisms via electronic lab reporting by December 2019.

Priority C. Antimicrobial Stewardship

Goal #3: Improve antimicrobial prescribing and slow antimicrobial resistance across the continuum of care.

Objectives

Objective 3.1
Bolster antimicrobial stewardship programs in all health care settings.

Strategies

- 3.1.1 Establish an antimicrobial stewardship subcommittee to guide program activities related to stewardship.
- 3.1.1 Collaborate with academic, state, and federal partners to collect data and expand outreach to all health care settings, specifically including but not limited to nursing homes, outpatient facilities, and emergency departments.
- 3.1.2 Increase the number of facilities meeting all seven core elements of antimicrobial stewardship by creating and distributing a Florida-specific toolkit.
 - 3.1.2.a Provide education and on-site assistance on the implementation of the elements.

Performance Measures

- Recruit no more than 10 multi-disciplinary subject matter experts from across Florida's geographic regions to serve on subcommittee by October 2019.
- Through quarterly meetings, establish statewide AS priorities to be distributed to all CHDs by May 2020.
- Submit application for CDC funding in December 2019 to gain access to outpatient prescribing data by summer 2020.
- Conduct analysis of outpatient prescribing practices and present to antibiotic stewardship subcommittee by September 2020.
- Work with subcommittee to identify high-prescribers and areas for improvement and provide assistance to those practitioners by April 2021.
- Collaborate with QIN-QIO monthly for data sharing and cross collaboration for outreach and stewardship assessment of nursing homes and outpatient facilities.
- Create and distribute Florida-specific toolkit of stewardship core elements for all health care settings for which resources are available by January 2020.
- Provide on-site assistance to all hospitals not meeting the seven core elements of stewardship by December 2020.

Objective 3.2
Expand the statewide
antimicrobial resistance
database.

- 3.2.1 Integrate Merlin alerts for unusual susceptibility profiles reported via ELR AR data.
- 3.2.2 Increase the number of facilities reporting into the NHSN AUR modules to expand statewide AR data and to provide facilities with a method for analyzing data and targeting stewardship interventions.
- 3.2.2.a Determine and promote the benefits of using the AUR modules to aid in recruitment.
- 3.2.2.b Provide education on analysis and use of AUR data.
- 3.2.3 Annually analyze a statewide antibiogram using ELR and NHSN data to evaluate trends over time and determine concerning resistance patterns.
- 3.2.4 Ensure laboratories are using the most current methods and guidelines for testing and reporting significant AR organisms.

- Increase the number of hospitals reporting all seven core elements of antimicrobial stewardship to 100% by April 2021.
- Establish criteria and response protocol for Merlin alerts based on past data by September 2019.
- Provide training on response protocol for at least 60% of CHDs by April 2021.
- Track the proportion of alerts communicated to CHD and CDC.
- Track the proportion of alerts resulting in outbreak response.
- Distribute assessment to determine benefits and needs of using NHSN AUR modules by October 2019 with a 60% response goal.
- Share summary of assessment with antibiotic stewardship subcommittee by January 2020.
- Based on findings, develop report or provide education to aid facilities in AUR data analysis by April 2020.
- Track the number of facilities reporting into the NHSN AUR modules.
- With antibiotic stewardship subcommittee, create data collection and analysis plan for development of statewide antibiogram by June 2020.
- Distribute annual survey to laboratories to assess laboratory methods and guidelines.
- Provide assistance to laboratories using outdated methods as identified.

Priority D. Surveillance, Outbreak, and Response to MDROs and *C. difficile*

Goal #4: Slow the emergence and prevent transmission of MDROs and *C. difficile*.

Objectives

Objective 4.1
Improve surveillance of MDROs and CDI to determine the statewide burden of these organisms.

Strategies

- 4.1.1 Use current surveillance systems to establish the incidence and prevalence of CPOs and CDI.
- 4.1.2 Explore policy options to mandate the reporting of CPOs and *C. auris*.
- 4.1.3 Enhance the quality of MDRO reporting by providing guidance and training on standardized case-reporting procedures.
- 4.1.4 Determine the capability of Merlin to serve as an MDRO registry for public health and health care providers.

Performance Measures

- Develop dashboard report to detect cases and clusters for containment and response efforts by October 2019.
- Track list of responses to the identification of novel MDROs (e.g., non-KPC carbapenemase-producing CRE, *Candida auris*) that the state and local health department actively participated in. Include the organism, the time (in days) between the first positive culture of the organism and health department notification, and the number of screening cultures performed during the response by December 2019.
- Establish multidisciplinary workgroup for discussion of policy options by September 2019.
- Hold quarterly meetings with majority of multidisciplinary workgroup in attendance starting Q4 of 2019. Record meeting minutes.
- Provide summary report of action to key stakeholders quarterly.
- Create guidelines for case reporting of CRE and other MDROs by July 2019.
- Increase the number of facilities reporting by 5% by January 2020.
- Conduct needs assessment to evaluate surveillance system and areas for performance improvement by February 2020.
- Compile summary of successes and challenges learned during process of

		onboarding facilities to new data systems by April 2020.
Objective 4.2 Enhance laboratory capacity for testing MDROs and CDI.	<p>4.2.1 Assess the current capacity and testing practices of BPHL, commercial laboratories, and facilities for detecting high-priority MDROs.</p> <p>4.2.2 Create recommendations for laboratory testing methods to identify and characterize high-priority organisms, such as CRE (e.g., susceptibility testing only vs. resistance mechanism testing) and <i>C. difficile</i> (e.g., immunoassay vs. molecular and other tests).</p> <p>4.2.3 Recruit laboratories for sentinel site surveillance in collaboration with ARLN.</p>	<ul style="list-style-type: none"> • BPHL to provide a list of laboratories with advanced capabilities to perform recommended or advanced testing for high-priority MDROs by December 2019. Partnering with FDOH or other facilities; this information may be available from NHSN survey data and other sources. • BPHL to provide the number of laboratory personnel trained and proficient in performing all phenotypic testing for CRE and CRPA by January 2020. • BPHL to provide number of each type of health care facility associated with submitting clinical laboratories by February 2020. • Conduct an annual educational event for health care providers and laboratory professionals on the merits of various testing methods and appropriate specimen collection procedures. • Report annual number of isolates received from participating clinical laboratories by organism and facility type. • Recruit a minimum of three sentinel site surveillance laboratories by December 2019, increase by three facilities yearly thereafter.
Objective 4.3	<p>4.3.1 Develop and maintain standardized guidance on outbreak response and containment strategy consistent with best practices.</p>	<ul style="list-style-type: none"> • Develop standard outbreak guidance for HAI and AR response and containment by July 2019.

Standardize outbreak response and containment.

4.3.2 Develop and implement a framework for a regional response to contain transmission of MDROs across Florida counties.

4.3.3 Increase awareness in a region through the development of educational and communication materials.

4.3.3.a Identify infection control gaps at high-risk transmission facilities through targeted infection control assessments.

- Develop a formal regional response plan by September 2019.
- Annually evaluate response plan with CHD POCs.
- Report the number/types of facilities for which on-site and remote assistance was provided by the HAI program.
- Report the mean number of visits including range, by facility type, made to facilities where on-site technical assistance was provided.
- Report the number of ICARs conducted with a goal of 10% increase from prior year, annually.
- Provide annual summary description of gaps identified and mitigation performed as part of on-site assistance to the HAI advisory board.
- Conduct evaluation of performance measures pre- and post-assessment with a goal of at least 50% improvement between pre- and post-assessment.
- Annually report a description of each prevention initiative implemented to the HAI Advisory Board:
 - Number/types of facilities reached
 - Description of interventions used within the initiative
 - Barriers to implementation
 - Changes to the initiative's process measures
 - Reductions in rates (as measured by NHSN) attributed to the initiative
 - Any other outcome changes